

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P - 0206 - PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 03/02339	International filing date (day/month/year) 24/01/2003	(Earliest) Priority Date (day/month/year) 11/12/2002
Applicant BOURNS INC		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 10 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

ENCAPSULATED ELECTRONIC DEVICE AND METHOD OF MANUFACTURING THE SAME

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

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☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/02339

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01C1/14 H01C7/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01C H02H H05K H01H C04B G01K H01L H05B G03F C25D H01R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 884 391 A (MCGUIRE KATHERINE M ET AL) 23 March 1999 (1999-03-23) cited in the application	1
X	column 13, lines 15-20,45-60; figures 3,4,6C,8,11C,12	1-4,6-8, 10,11, 13,14
Y		5,9
A	the whole document	12
Y	FR 2 790 136 A (LITTELFUSE INC) 25 August 2000 (2000-08-25)	5,9
Y	pages 16-17; figure 7	5,9
A	the whole document	12
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

9 July 2004

Date of mailing of the international search report

09.08.2004

Name and mailing address of the ISA

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 912 450 A (YONEDA YASUNOBU ET AL) 27 March 1990 (1990-03-27)	15,16, 19,22, 26,28
X	abstract; claim 1; figures 1,2a,2b,3,4a,4b,5	15,16, 19,22, 23,26, 28,44, 45,48, 61-63, 76,80,82
X	column 4, lines 30-68	15,16, 19,22, 23,26, 28,44, 45,48, 61-63, 76,80,82
X	column 3, lines 25-45	15,16, 19,22, 23,26, 28,44, 45,48, 61-63, 76,80,82
X	column 5, lines 1-5,19-24	15,16, 19,22, 23,26, 28,44, 45,48, 61-63, 76,80,82
A	the whole document	14,17, 18,20, 21,24, 25,27, 64-75, 77-79, 81,83-88
Y	figures 1,2a,2b,3,4a,4b,5	32-43, 57-60, 64-75, 77-79,81
X	FR 2 792 764 A (POLYTRONICS TECHNOLOGY CORP) 27 October 2000 (2000-10-27)	62
Y	pages 5,8,9,10; claims 1,2,5-9,11; figures 1,3a	32-43, 57-60, 64-75, 77-79,81
X	claim 11	62
A	US 5 852 397 A (CHAN CHI-MING ET AL) 22 December 1998 (1998-12-22) the whole document	15-88

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INTERNATIONAL SEARCH REPORT

International Application No.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 00/38199 A (BOURNS INC) 29 June 2000 (2000-06-29) the whole document -----	15-88
A	US 6 084 206 A (WILLIAMSON MICKEY A ET AL) 4 July 2000 (2000-07-04) the whole document -----	1-88
A	US 2002/179331 A1 (BRODSKY WILLIAM LOUIS ET AL) 5 December 2002 (2002-12-05) the whole document -----	1-88

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/02339

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

As a result of the prior review under R. 40.2(e) PCT,
no additional fees are to be refunded.

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14

An encapsulated electronic device based on an active material sandwiched between two electrodes. An insulative material is applied to the electrodes and the active material. Two external terminals are made on the insulative layer. The two electrodes being electrically linked to the two terminals through two interconnections comprising a metal plating.

In the method of claim 32 a conductive path is provided for the electrical connection.

The method of claim 44 is directed to the manufacture of an encapsulated PTC device.

2. claims: 57-60

A method for manufacturing parallel device in which terminals of a first matrix are arranged so that they are aligned with the terminals of a second matrix.

3. claims: 61-88

A matrix of device in which adjacent elements of electronically active material are separated from each other by a region of insulating material.

4. claims: 15-31

The wording of the claim 15 presently on file, render it difficult, if not impossible, to determine the matter for which protection is sought. The present claims fails to comply with the clarity and conciseness requirements of Article 6 PCT (see also Rule 6.1(a) PCT). The wordings "An encapsulated PTC device comprising a segment of insulating material having an aperture defined therein" is interpreted as "An insulating sheet material having an aperture defined therein".

5. claims: 44-56

An encapsulated PTC element has his circumference surrounded with a segment of insulating material which could comprise a circuit board.

6. claims: 32-43

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

A method of manufacturing an electronic device known from
D1. The device is then placed in an aperture defined in a
printed circuit board

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 206

Continuation of Box 3.

Claims Nos.: 15-31,

Unclarity Article 6 PCT .

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/02339

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5884391	A	23-03-1999	US 5699607 A US 6023403 A AU 1953697 A CN 1212072 A EP 0922286 A1 JP 11509689 T WO 9728543 A1	23-12-1997 08-02-2000 22-08-1997 24-03-1999 16-06-1999 24-08-1999 07-08-1997
FR 2790136	A	25-08-2000	DE 10007888 A1 FR 2790136 A1 JP 2000294406 A TW 463443 B	12-10-2000 25-08-2000 20-10-2000 11-11-2001
US 4912450	A	27-03-1990	JP 63281402 A JP 2737778 B2 JP 64001204 A JP 2633838 B2 JP 63078503 A US 4786888 A	17-11-1988 08-04-1998 05-01-1989 23-07-1997 08-04-1988 22-11-1988
FR 2792764	A	27-10-2000	TW 415624 Y DE 20007462 U1 FR 2792764 A3 US 6377467 B1	11-12-2000 30-11-2000 27-10-2000 23-04-2002
US 5852397	A	22-12-1998	US 6651315 B1 AU 692471 B2 AU 7723694 A BR 9407542 A CA 2171749 A1 CN 1130955 A ,B CN 1215896 A DE 69431757 D1 DE 69431757 T2 EP 1235233 A2 EP 0719442 A1 JP 9503097 T WO 9508176 A1 AT 163796 T AT 250274 T CA 2139330 A1 DE 69317288 D1 DE 69317288 T2 DE 69333211 D1 DE 69333211 T2 EP 1347470 A1 EP 0649562 A1 EP 0811993 A2 ES 2114062 T3 HK 1009305 A1 JP 7509347 T KR 275161 B1 WO 9401876 A1	25-11-2003 11-06-1998 03-04-1995 31-12-1996 23-03-1995 11-09-1996 05-05-1999 02-01-2003 14-08-2003 28-08-2002 03-07-1996 25-03-1997 23-03-1995 15-03-1998 15-10-2003 20-01-1994 09-04-1998 12-11-1998 23-10-2003 01-07-2004 24-09-2003 26-04-1995 10-12-1997 16-05-1998 19-05-2000 12-10-1995 15-12-2000 20-01-1994
WO 0038199	A	29-06-2000	US 6242997 B1 AU 2357900 A CN 1342322 T EP 1147526 A1	05-06-2001 12-07-2000 27-03-2002 24-10-2001

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/02339

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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			TW 527609 B	11-04-2003
			WO 0038199 A1	29-06-2000
			US 2001000658 A1	03-05-2001
			US 2001015688 A1	23-08-2001
US 6084206	A	04-07-2000	US 2002003136 A1	10-01-2002
US 2002179331	A1	05-12-2002	US 2003116351 A1	26-06-2003